

In the specification:

*Please replace the last paragraph on page 8, bridging onto page 9:*

At A description of the operation of the online payment system 100 will now be described with reference to Figures 1-2 and 5-6. At step 500 a registered merchant 106 decides to place an item of digital content (article, music, picture, movie, other data) for sale utilizing the online payment system 100. The merchant 106 uses the encoder utility software 150 provided by the payment broker 118 to encrypt the digital content of the item for sale by first calculating a unique product key " $K_{prod}$ " for the item (step 502).  $K_{prod}$  is derived by using the encoder utility software 150 to create a secure one way hash of data known to the merchant such as a product ID, the merchant secret key " $K_m$ ", and a randomly generated number.  $K_{prod}$  is then used by the encoder utility software 150 to encrypt the digital content of the item using a known encryption algorithm (step 504). Once the item has been encoded, the encoder utility software 150 creates the file 180 to include a length identifier 200, a signed header 202, a product preview 204, and the digitally encoded content 206 (step 506). The length 200 is used to identify the length of the header 202 portion of the file 180. The significance of this field is that it allows the plug-in 178 to know how much information needs to be read in order to display the header 202 while concurrently downloading the data for the product preview 204 and the encrypted digital content 206. Alternatively, the file length 200 can be used by the plug-in 178 to only download the header 202 and present that information (required to complete the sale) on display 123. The remainder of file 180 (product preview 204 and encrypted digital content 206) are respectively downloaded only if the buyer chooses to view the product preview 206 or buy the digital content item. Accordingly, second and third file lengths can be included as part of the digital file 180 to respectively identify to the plug-in 178 the respective lengths of the product preview 204 and the digital encrypted file 206. These file lengths allow the product preview data 204 to be downloaded and displayed upon request by the buyer without

requiring the encrypted digital content file 206 to be downloaded until a buy decision is made by the buyer. Thus, using the file lengths to delay the downloading of various portions of file 180 greatly improves network performance since selective portions of the file 180 are only downloaded upon command.

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Once the buyer decides to purchase the digital content 206 of the downloaded file 180, the plug-in 178 generates a purchase request that is sent to the broker server 132. The purchase request is created by the plug-in 178 by digitally signing information contained in the header 202 such as the product ID and the price together with the buyer ID and signing this information with the private key  $K_{BV}$  of the buyer 102 (step 616). In addition to the purchase request, the header 202 information of file 180 is also sent to the broker server 132. The purchase request and header 202 are sent to the broker computer 132 via a SSL (step 618). The broker computer 132 obtains the public key  $K_{BU}$  of the buyer from the buyer vault 170 and uses it to verify the signed header information in the purchase request using the same algorithm stored in the decryption unit 164 that the plug-in 178 used to sign the information (step 630). A comparison of the decrypted information is made with the header 202 information included in the purchase request (step 622). If the decrypted header information matches the corresponding header 202 information sent as part of the purchase request, verification of the buyer's purchase request has successfully occurred (step 624). If there is not a match, the transaction is terminated (step 625). Assuming verification is successful, the broker computer 132 then calculates a MAC in the same manner that the merchant 106 calculated the MAC contained in the header 202 using the merchant specific data residing in the merchant data base 160 (merchant key  $K_m$  obtained by correlation to merchant ID in purchase request) together with the other information needed to calculate the MAC and contained in the header 202 (step 626). If the broker calculated MAC matches the MAC in the header (step 628), verification that the header 202 information is actually that of the merchant 106 occurs (step 630). Thus, if an unscrupulous buyer attempted to change, for example, the price in the header 202, a MAC match would not occur and the

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cont transaction would be terminated (step 632). Therefore, a reliable price check mechanism is incorporated in the online payment system 100.

*Please replace the last Paragraph on Page 13, bridging onto Pages 14 and 15:*

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Subsequent to the download of the receipt and the product key by the by the buyer computer 122, the plug-in 178 via the browser 176 displays a post sales dialogue box on display 123 (step 800). The post sales dialogue box queries the user as to whether 1) they wish a refund, 2) they wish to take a survey (with an offer to be reimbursed for their time), and 3) the transaction is complete. If the buyer selects a request for refund, a new dialogue box appears prompting the user to select from among a predetermined number of reasons as to why they desire a refund or to enter their own reason (step 810). This information along with the receipt for the item is signed with the private key of the buyer  $K_{BV}$  and sent to the broker computer 132 (step 820). The broker computer 132 utilizes the buyer's public key  $K_{BU}$  to obtain the refund information and the receipt (step 822) and checks to ensure that 1) the buyer's account is active, 2) the refund request is for a previously purchased item and 3) a refund has not previously been made for that item (step 824). Additionally, the broker computer 132 ensures that any preset period of time associated with how long after purchase a request for refund can be made has not been exceeded (step 824). If any of the above checks fail the buyer 102 is advised that a refund will not be given (step 826). On the other hand, if the checks are all positive, the broker computer 132 debits the refund amount from a dispute account associated with the buyer 102. That is, for each buyer, in addition to their vault 170 there is a dispute account established at the broker computer 132. The dispute account has a threshold value associated with it that is debited each time a refund is given to a buyer. Thus, for a given refund the dispute account and the merchant's account 162 for the merchant 106 selling the particular item are debited by the refund amount (step 828). The money debited from the merchant's account is transferred to the buyer's vault 170 (step 830) and the buyer receives a message on display 123 that the vault has been credited (step 832). However, if the dispute account is decremented to zero or a negative (step 829), a flag associated with the buyer's vault

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cont.

170 is set from an active status to an inactive status (step 834). At this point in time it is determined if the credit card accepts refunds (step 835), and if it does, any monies in the buyer's vault 170 are refunded to the buyer's default credit card (step 836). If the default credit card does not accept a refund, a message is sent to a general logging device so that a manual refund can be issued (step 838). The buyer 102 then receives a message indicating that their vault is inactive and their remaining money will be credited to the default credit card or returned manually as the case may be (step 840). It is also possible to establish a time limit associated with the threshold value of the dispute account. That is, if the threshold value is not exceeded over a specified period of time, the dispute account is reset an initial value. Moreover, an additional counter can be added at the broker computer 132 for each buyer 102 that keeps track of the number of times a refund has been requested. If the number of requests exceeds a predetermined number, the buyer's vault is rendered inactive. Additionally, while the above described embodiment described the refund account as a descending register which starts at the threshold value and is debited down to zero, one skilled in the art will recognize that the refund account could be an ascending register which adds the refund amounts and inactivates the buyer's vault 170 when the predetermined threshold value is met.

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In the above described embodiment, the encoded digital content 206 is placed on the web site 181 in encoded form (static encoding). A benefit of static encoding is that no software is required at the host web site 181. Thus, static encoding is good for items that will have no content change such as previously written articles or musical recordings. However, if the item for sale is constantly changing data, such as stock information, the static encoding method is not efficient. In this situation, the encryption utility software 150 would be placed at the host web site 126 and the digital content to be purchased would be encrypted dynamically prior to each download of a file 180 to a

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buyer 102. Thus, for each buyer request for a digital content item a new product key  $K_{prod}$  is generated. This provides increased security since if  $K_{prod}$  is compromised for a single download of a file 180, only that specifically downloaded file 180 is compromised. In the static situation where there is a single  $K_{prod}$  associated with a file 180, if  $K_{prod}$  is compromised any download of the file 180 is potentially compromised. The disadvantage of the dynamic encoding model as compared to static encoding is that it creates a greater burden on the host server 126. The instant invention recognizes the advantages of static and dynamic encoding and in one embodiment contemplates a web site host 120 that has statically encoded digital content which is of a low value and a stable nature and also provides dynamic encoding of rapidly changing digital content and/or high value digital content items. Since the ultimate file structure 180 resulting from either the dynamic or static encoding is the same, the plug-in 178 can effectively perform its designed functions in either situation.

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An alternative method of providing the multiple copy/distribution corporate rate structure is to designate, in the buyer database 168, a designated rate for multiple copies (i.e. 50) that is automatically invoked any time the particular buyer 102 purchases an item. In this situation the buyer 102 would be charged a cost associated with the initial cost of the item as well as the premium charged for the right to make/distribute the designated multiple copies. This feature also permits the customizing of discounts to individual corporations.

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In the claims:

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1. A method for using a computer to facilitate a transaction between a merchant and a buyer, the method comprising the steps of: